



MINUTES

**Coalbed Methane Development & Agricultural Sites Tour
Sheridan, WY & Miles City, MT
September 25, 2002**

SHERIDAN, WY

The Board of Environmental Review's CBM and agricultural sites tour began at the Best Western Sheridan Motel at approximately 7:15 a.m. in Sheridan, Wyoming.

Attendance

Board Members Present: Chairman Joseph Russell, David Fishbaugh, Garon Smith, and Russ Hudson

Board Members Absent: Kim Lacey, Susan Kirby Brooke, and Ward Shanahan

Board Attorney Present: Tom Bowe, Attorney General's Office, Department of Justice

Board Secretary Present: Joyce Wittenberg

Department Personnel Present: Jan Sensibaugh, Director; Tom Livers, Deputy Director/Board Liaison; John North, Chief Legal Counsel, Legal Unit, Director's Office (DIR); Art Compton, Administrator, Planning, Prevention and Assistance Division (PPAD); Abe Horpestad, Resource Protection Bureau, PPAD; Jim Oster, Contracted Consultant

Interested Persons Present: Chris Beebe, Montana Wildlife Federation; James Bauder, Soil Scientist; Art Hayes, Jr., Tongue River Water Users; Joe Icenoggle, Fidelity Exploration; Bruce Williams, Fidelity Exploration; Mike Bergstrom, Fidelity Exploration

Bruce Williams, Fidelity Exploration, provided background on Coalbed Methane and explained it takes 200-500 feet of organic material for a significant coal seam. He explained how coal is formed, that methane comes from coal, and that there is more gas in coal than can be contained.

Mr. Williams pointed out sinkholes in a hillside he deemed a result of airshafts in underground mines. He pointed out some ponds that were built on a Wyoming discharge permit. He affirmed that the discharge ultimately reaches a stream. Mr. Williams clarified that there are only two of these permits in Wyoming; the rest require containment ponds.

Mr. Williams showed charts of well drilling and explained how the drilling is done. There was discussion on the possibility of re-injection.

Mr. Williams directed the Board's attention to various points of interest along the route, including CBM fields with well boxes, compressor stations, well head separators, batteries, measuring stations, and ponds.

Art Compton, DEQ, questioned Mr. Williams about the evolution of water management strategy in Wyoming and how it affected plans. Mr. Williams explained problems with soils having no calcium or magnesium, which resulted in high SAR levels. He further explained that addition of calcium (gypsum) and sulfur adjusted the SAR level and resulted in successful water irrigation.

Tom Bowe, Board Attorney, questioned Mr. Williams about re-injection. Mr. Williams responded negatively, stating Marathon Oil Company has tried in depleted wells. He stated the re-injection rate was poor and that it took two re-injection wells per well.

Mr. Williams discussed current production rates and the Tongue River Pilot. He stated that \$3.5 million in production taxes were paid to Montana in 2001. He explained that a 7-10 year life span is anticipated on the wells and that wells will be plugged with cement when finished, unless the rancher wants to retain the wells for water. He also explained that the land would be reclaimed.

Mr. Williams commended the Board on its recommendation of the collaborative process. Further discussion commenced regarding gas prices.

At approximately 8:00 a.m. the Board exited the bus at a Fidelity CBM production site, where Mr. Williams showed a well and explained the construction and function. He pointed out ponds and explained that they were permitted with the Board of Oil and Gas. Mr. Williams showed gas lines from the wells and explained how the gas flows through them. He further provided information regarding gas measurements. The Board also viewed a compressor station.

Back on the bus, Mr. Williams was questioned about choosing pond sites. Mr. Williams explained that several things factor in to choosing the site for a pond, including convenience for both the producer and the landowner and staying away from spring locations.

Discussion commenced regarding discharge to the Tongue River and various comparative differences between Montana and Wyoming.

The Board disembarked at the CX Ranch, where they viewed a point of discharge on the Tongue River. Board members and others present were offered a taste of the discharge water.

Back on the bus, Mr. Williams explained that the irrigation site would not be visited as planned, due to time constraints.

Mr. Jim Oster discussed center pivot irrigation systems, which he stated could be a part of gas-drilling water-disposal operations.

Mr. Art Hayes pointed out the Tongue River Dam, which was built for irrigation. He informed the Board that the Tongue River currently provides irrigation to 75 water users. Mr. Hayes directed the Board's attention to several points of interest along the route, including Four-Mile Creek, a clinker (clay) zone, springs, and a diversion dam and ditch.

Board members disembarked at the Birney School, where Mr. Hayes demonstrated methane in the water by lighting the gas escaping from the top of the well pipe in the schoolyard.

Board members disembarked to view a small spreader-dike irrigation system, which are very common in Eastern Montana to irrigate hay fields from snow melt and rain storm run-off.

Board members disembarked at the Hayes Ranch, where Mr. Hayes pointed out soil problems in his field. Differences in the soil of various areas of the field were viewed.

Back on the bus, Mr. Art Compton, DEQ, updated the Board on the collaborative effort. He provided information regarding the facilitator and the players, and stated that three meetings have been held to date. The collaborative discussed flow-based permitting combined with numeric standards. Such permits are more difficult to administer, but are used for the paper plant near Frenchtown and the proposed Rock Creek Mine. The next meeting was scheduled to occur October 11.

Mr. Joe Icenoggle provided input on his opinions regarding the collaborative effort.

Break

Board members boarded planes at approximately 2:00 p.m. in route to Miles City. A quorum was not present on either aircraft.

MILES CITY, MT

The Board's tour continued from the Miles City Airport at approximately 3:00 p.m.

Attendance

Board Members Present: Chairman Joseph Russell, David Fishbaugh, Garon Smith, Kim Lacey, and Russ Hudson

Board Members Absent: Susan Kirby Brooke and Ward Shanahan

Board Attorney Present: Tom Bowe, Attorney General's Office, Department of Justice

Board Secretary Present: Joyce Wittenberg

Department Personnel Present: Jan Sensibaugh, Director; Tom Livers, Deputy Director/Board Liaison; John North, Chief Legal Counsel, Legal Unit, Director's Office (DIR); Art Compton, Administrator, Planning, Prevention and Assistance Division (PPAD); Abe Horpestad, Resource Protection Bureau, PPAD; Jim Oster, Contracted Consultant

Interested Persons Present: Clair Johnson, Billings Gazette; John Halbert, Miles City Star; Roger Muggli, Tongue & Yellowstone Irrigation District; Ray Muggli; Mark Fix, Northern Plains Resource Council (NPRC); Rex Mongold, Tongue River Farm; Glenn Gay, Gay Ranch; Harmon Ranney, Montana Coalbed Natural Gas Alliance

Mr. Roger Muggli, TY Irrigation District, provided history on the District, stating it currently irrigates approximately 9800 acres of alfalfa, corn, beets, beans, and other crops, which need good-quality irrigation water. He explained he was taking the Board to a new inlet structure, built in 1999. In route, Mr. Muggli directed the Board's attention to a variety of irrigated fields, a canal, and Rex Mongold's Icelandic Sheep farm (considered specialty livestock).

Board members disembarked to view the new inlet structure with a fish bypass at the TY Dam.

Back on the bus, in route to his ranch, Mr. Muggli directed the Board's attention to lands irrigated by the TY Irrigation District, barley silos on his ranch, and an alfalfa pellet plant, which has been able to sell all it can make, with some customers out-of-state.

Mr. Muggli took Board members out into one of his fields and pointed out heavy clay soils that appeared to have too many salts. It also appeared that these salts might possibly have caused structural collapse of those soils. Several areas of the field appeared to have the same salt/structural problem. Mr. Muggli expressed concern that if there are already some soil problems with good water, the water from coal bed methane development, with higher salinity and SAR, will make the problems worse.

Board members boarded the bus and disembarked at the Griffin Fields, where Mr. Bill Griffin provided information on fields and crops, and information on his family ranch history, which irrigates from the Powder River. From Mr. Griffin's house, Board members spread out

among numerous vehicles for a tour of the Griffin Fields. Board members unloaded at several points along the route:

1. Ditch-irrigated alfalfa – Mr. Griffin provided detailed information on the SAR content of the ditch water and the relationship between EC and SAR. He explained that because of high salinity, the use of Powder River water for irrigation already causes management problems and lower yields in heavy soils. Different types of soils often occur in different parts of the same field.

2. Cornfield – The Board viewed damage in this field, which Mr. Griffin attributed to saline Powder River water and heavy clay soils.

3. Alfalfa field – The Board viewed sandy soil that contained a gravel layer. This field seemed to be less susceptible to damage from poor irrigation water quality because of the lack of clay in the soil and good drainage.

4. Pump Site – The board viewed a variety of soil layers along the bank depth and what was thought to be sodium along the riverbed. Mr. Griffin explained that because of irregular flows, an irrigator might be forced to use poor quality Powder River water and later hope to leach through some of the salt when there is a flow of better water.

Adjournment

At approximately 8:00 p.m. the Board ended its tour and returned to Miles City.

Board of Environmental Review September 25, 2002, Tour Minutes Approved:

JAN P. SENSIBAUGH
DIRECTOR
DEPARTMENT OF ENVIRONMENTAL
QUALITY

DATE

JOSEPH W. RUSSELL, M.P.H.
CHAIRMAN
BOARD OF ENVIRONMENTAL
REVIEW

DATE